

Claims

1. A method for increasing plant yield, comprising introducing into a plant a cyclin A nucleic acid, preferably encoding a cyclin A protein, which cyclin A nucleic acid is operably linked to a seed-preferred promoter.
2. Method according to claim 1, wherein said plant yield is selected from one or more of the following increased seed weight, increased number of filled seeds, increased seed number, increased seed size, increased harvest index, increased thousand kernel weight and modified seed composition, each relative to corresponding control plants.
3. Method according to claims 1 or 2, wherein said cyclin A protein comprises a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L.
4. Method according to any one of claims 1 to 3, wherein said cyclin A nucleic acid is a cyclin A2, selected from cyclin A2;1, cyclin A2;2, cyclin A2;3 and cyclin A2;4.
5. Method according to claim 4, wherein said cyclin A2 comprises a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and a motif consisting of E L I L V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N E L P S, having at least two of residues (-T---F--F---).
6. Method according to any one of claims 1 to 5, wherein said cyclin A is a variant cyclin A sequence selected from:
 - (i) Functional portions of a cyclin A nucleic acid;
 - (ii) Sequences capable of hybridising to a cyclin A nucleic acid/gene;
 - (iii) Alternative splice variants of a cyclin A nucleic acid/gene;
 - (iv) Allelic variants of a cyclin A nucleic acid/gene;
 - (v) Variants due to the degeneracy of the genetic code; and
 - (vi) Homologues, derivatives and active fragments of a cyclin A protein.
7. Method according to claim 6, wherein a variant cyclin A of (i) to (v) is capable of encoding a protein comprising a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and a motif consisting of E L I L V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N E L P S, having at least two of residues (-T---F--F---).
8. Method according to claim 6, wherein said variant cyclin A of (vi) comprises a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and a motif consisting of E L T L

V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N F L P S, having at least two of residues (—T----F—F—).

9. A method according to any one of claims 1 to 8, wherein said seed-preferred promoter is a promoter active in the endosperm.

10. A method according to claim 9, wherein said promoter is a prolamin promoter.

11. Method according to any one of claims 1 to 10, wherein said increased yield is achieved in optimal and sub-optimal growing conditions.

12. Method according to claim 11, wherein said sub-optimal growing condition comprises abiotic stress conditions, such as salt stress.

13. Method according to any of claims 1 to 12, wherein said plant is selected from rice, maize, wheat, barley, soybean, sunflower, canola, sugarcane, alfalfa, millet, barley, rapeseed, sorghum and cotton.

14. Plants obtainable by a method according to any of claims 1 to 13.

15. Construct comprising:

- (i) a nucleic acid encoding a protein comprising a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and optionally in addition a motif consisting of E L I L V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N F L P S, having at least two of residues (—T----F—F—) present;
- (ii) a seed-preferred promoter; and optionally
- (iii) a transcription terminator sequence.

16. Construct according to claim 15, wherein said seed-preferred promoter is a promoter active in the endosperm.

17. Construct according to claim 16, wherein said promoter is a prolamin promoter.

18. A plant expressing a cyclin A under the control of a seed-preferred promoter, wherein said cyclin A comprises a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and optionally in addition a motif consisting of E L I L V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N F L P S, having at least two of residues (—T----F—F—) present, which plants

have increased yield relative to corresponding wild type plants and relative to transgenic plants constitutively expressing cyclin A.

19. Plant according to claim 18, wherein said seed-preferred promoter is a promoter active in the endosperm.

20. Plant according to claim 19, wherein said promoter is a prolamin promoter.